REMARKS/ ARGUMENTS

This amendment is in response to the Office Action of April 30, 2004. This amendment also corrects applicant's prior amendments of November 4, 2003 and January 6, 2004, and supplements applicant's prior amendment of September 25, 2003, which was submitted in response to the Office Action of July 10, 2003.

Claims 1-18 are pending in this application. Claims 6-16 were previously withdrawn from consideration by the Examiner due to the Examiner's final election requirement following applicant's election with traverse. Claim 1 is amended herein to restore this claim to essentially the same form as it existed prior to September 25, 2003. Claims 19-22 are canceled.

The Examiner is thanked for previously indicating that claims 4 and 5 would be allowable if rewritten in independent form.

Request for Reconsideration of Withdrawal

Applicant requests that the Examiner reconsider her withdrawal of claims 6-16 made pursuant to the final election requirement made in the Office Action of July 10, 2003. It is submitted that the elected species in the present case involve the subject matter of claims 1-8, 11, 12-15 and 17 and 18. Significantly, the European Patent Office Examiner in the International Preliminary Examination Report dated 02.01.2002, for the priority PCT application, has already indicated that claims 1-8, 11, 17 and 18 are all part of one group of claims that are all drawn to the same invention. See the "Separate Sheet" in that Report discussing "Item IV" (copy enclosed).

Also, as previously discussed, claims 1-5, 17 and 18 relate to embodiments wherein they (ICPs) form part of a capacitor – claims 1-5 embodied in a moisture sensor, and claims 17-18 for use of such a moisture sensor in a diaper. These embodiments are shown in Figures 1 and 2. Moreover, claim 6 relates to Figure 3, wherein the ICPs are provided on the first side of the substrate and an electrically conductive path with windings on the second side of the substrate, wherein the thus- formed coil, together with the layer of ICPs, forms a capacitor. This is indicated in claim 6 itself and on page 7, line 2 of the specification. Dependent claims 7 and 8 relate to the way wherein the information acquired by means of the capacitive moisture sensor is obtained. It is therefore respectfully submitted that the subject matter of claims 1-8, 11, 17 and 18 does not relate to patentably distinct species.

Further, claims 11 and 12-15 relate to a fabric comprising the ICPs. It is respectfully submitted that also this embodiment (shown in Figure 5) operates based on a change in parasitic capacitance during moistening of the ICP. This results from a change in the intrinsic properties, in particular the

dialectric constant, as mentioned on page 8, lines 17-20 of the specification. Thus, in this embodiment, moisture is detected in a way to comparable to that described for Figure 1.

The choice of these embodiments is clearly motivated and supported by the text of the original application, wherein it is mentioned that while detecting a change in the resistance of ICPs is known for moisture detection, ICPs as part of a capacitor is the invention and provides the advantage of detection of relatively small amounts of moisture. (See page 1 of the application.)

In conclusion, applicant submits that the elected species involve the subject matter of claims 1-8, 11, 12-15 and 17 and 18.

Discussion of Claims 1-3, 17 and 18

The following discussion of claims 1-3, 17 and 18 was previously presented in applicant's amendment of September 25, 2003. It is repeated here for convenience.

Claim 1

Applicant respectfully disagrees with the rejection of claim 1 as being obvious over U.S. Patent 4,429,343 (Freud) in view of applicant's admitted art. Freud discloses a humidity sensing element, wherein two sets of interdigitated finger electrodes are covered by water absorbing coating 22, more specifically cellulose acetate butyrate or silicone rubbers (column 4, lines 10-12 and claims 3 and 4). The electrodes and water absorbing coating 22 together form a capacitor that is able to sense humidity. The teaching of Freud is that problems of contamination on the surface of water absorbing coating 22 can be reduced by enhancing the thickness of this coating to a thickness larger than the period of the fingers of the indicated interdigitated electrodes (column 2, lines 35-41). The explanation for this effect is that the capacitance between the sets of fingers is determined by the weighted average of the dialectric constant of the material, wherein the portion closest to the fingers is weighted most (column 3, lines 16-20). In summary, Freud focuses on the dimensions of the elements, particularly the coating 22, making up the humidity sensing element.

The present invention of the applicant takes an opposite point of view in focusing on the intrinsic properties of the material used for the absorbing layer, i.e., an intrinsically conducting polymer (ICP), to improve the moisture sensor. The polymers employed in Freud absorb water up to only 10% of their volume, such that the change in dialectric constant that is responsible for the change in capacitance is derived from the small variation of the water content. In contrast, ICPs structurally change in the presence of moisture with respect to the locations and mobilities of the oxidizing ions,

resulting in a much larger change of the dielectric constant for the ICPs. As a result, the measurement of much smaller amounts of fluid can be performed by using ICPs, as described on page 1, lines 16-17 of the patent application.

Although intrinsically conducting polymers may be known as such, Freud neither teaches nor suggests the use of such materials. The skilled person considering Freud and aiming at improving the humidity sensing element would increase the thickness of the water absorbing coating 22 in view of the teaching discussed above. Maybe the skilled person would alter the distance of the fingers, as the patent makes clear there exists a relationship between the distance between the fingers and the thickness of the water absorbing coating 22. However, Freud does not even hint at the use of materials with different intrinsic properties (structural change in the presence of moisture) to provide an improved moisture sensor.

In conclusion, is respectfully submitted that claim 1 is not obvious in view of the prior art.

Claims 2-3

As claims 2-3 depend on claim 1, is further submitted that these claims are novel and non-obvious over the prior art mentioned.

In particular, it is submitted that U.S. Patent 5,040, 411 (Medzius) does not teach or suggest the use of a liquid absorbing layer. The layers 14, 16, 18 are all parts of a conventional trilayer windshield 12 (column 3, line 66 through column 4, line 2). There is no protective coating over the comb electrodes 22, 24 (column 4, lines 15, 16), i.e., the electrodes are directly exposed to rain on the windshield. Medzius clearly states in column 8, lines 31-37: "Unlike other rain sensors which constantly monitor variations in capacitance caused by moisture absorbent coatings or dialectric substrates, there are no variations in sensor 10 due to changes in moisture absorption because there is no coating over coating members 22 and 24 or leads 32 and 34, and there is no water absorbent dialectric positioned between the members or lead." Therefore, Medzius teaches the skilled person away from the use of a liquid absorbing layer as is used in Freud, let alone from the use of an ICP as absorbing layer.

Claim 17

As claim 17 depends on claim 1, is further submitted that claim 17 is novel and non-obvious in view of the prior art. The admission on page 1, lines 7-10 of the application relates to the use of ICPs for sensors detecting a change of resistance and not change of capacitance.

Claim 18

Claim 18 is dependent on the previous discussed claim 2, which in turn is dependent upon claim 1. As such claims were argued to be novel and inventive over the prior art, the same would hold for claim 18.

In particular, there is nothing in U.S. Patent 6,097,297 (Fard) that would motivate the skilled person, starting from Freud, to look to Fard or vice versa. And even if such a combination would have been made, this combination would lack the combined features of claims 1, 2 and 18.

Accordingly, applicant submits that, in light of the amendments made to the claims herein, and the discussion above, the Examiner's rejections of the claims under 35 U.S.C. 103(a) have now been overcome.

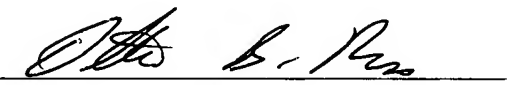
Conclusion

In conclusion, all of the claims are now believed to be allowable. Accordingly, applicant respectfully requests that a timely Notice of Allowance be issued in this case.

If there are still unresolved issues requiring adverse action, it is requested that the Examiner contact applicant's attorney so that appropriate arrangements can be made for discussing and perhaps resolving the same.

Respectfully submitted,

MUSERLIAN, LUCAS AND MERCANTI, LLP

By: 

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Reference is made to the following documents, previously cited in the International Search Report:

D1: WO-A-99 31494 (AROMASCAN) 24 June 1999
D2: DE-A-195 09 518 (INST CHEMO BIOSENSORIK) 26 September 1996
D3: DE-A-28 45 269 (MESSERSCHMITT BOELKOW BLOHM) 30 April 1980
D4: DE 34 37 950 A (TARUTTIS ARNO H DIPL ING) 18 April 1985

Re Item IV
Lack of unity of invention

1. The application is not unitary (Rule 13.1 PCT) and relates to four separate inventions which constitute the subject-matter of the following groups of claims:

→ i) claims 1-8, 11, 17 and 18 for a moisture sensor comprising an electric circuit and ICPs, wherein the ICPs form part of a capacity, the electric circuit being arranged for detecting a change in capacity;

ii) claims 9, 10 and 17, for a moisture sensor comprising an electric circuit and ICPs, wherein the electric circuit comprises a transponder incorporated into a casing including ICPs;

iii) claims 12-15 and 17, for a moisture sensor comprising an electric circuit and ICPs, wherein the sensor comprises a current-conductive fabric comprising ICPs; and

iv) claims 16-18, for a moisture sensor comprising an electric circuit and ICPs, wherein the sensor comprises at least two layers including ICps and a moisture-absorbing dielectric located between said layers, the electric circuit being arranged for detecting a voltage difference between said layers.

2. The four separate inventions cited above are not linked so as to form a single general inventive concept for the reasons listed below.

The technical relationship among said inventions is that they concern a moisture